

MICHIGAN DEPARTMENT OF CONSERVATION

INTEROFFICE COMMUNICATION

June 21, 1967

TO: Michigan Forest Pest Program Cooperators
FROM: Paul R. Flink, Staff Forester - Entomologist
SUBJECT: Forest Pest Situation

After a somewhat delayed spring, the insects have descended upon us in tremendous numbers. Although more a pest of foresters than of forests, those of you who have been in the field know that since about Memorial Day, the mosquitoes and blackflies have been working with a vengeance trying to make up for lost time.

The EUROPEAN PINE SAWFLY was again widespread throughout southern Lower Michigan and caused considerable defoliation of unsprayed plantations. Fortunately, the trees are not killed, and the defoliation is now finished for the season or soon will be finished. There have been some questions as to the availability of the virus for controlling this pest. Due to a ruling by the Federal Government, preparations of the virus are not available until purified forms can be developed that do not contain contaminants that may possibly be harmful to other forms of life.

Following the buildup in 1966, the FRUIT TREE LEAF ROLLER is again stripping oak trees in the northern half of Lower Michigan, particularly in the central portion of the state. The caterpillars are light green with a dark head. The thoracic shield behind the head is usually light colored but sometimes has dark areas on the sides. Some individuals have the thoracic shield all dark. This insect is closely related to the jack pine budworm and the larvae have the same general body shape, size and quick reactions when disturbed. Pupation will take place in late June or early July, either in rolled up oak leaves or leaves of underbrush plants. Widespread defoliation by the leaf roller occurred in 1956 and 1957 and would not have caused any tree mortality had not the trees been suffering from a soil moisture deficiency and severely injured by frost in 1958. Although it is late for control now, Sevin or methoxychlor are good insecticides to use and do not have some of the undesirable qualities of DDT.

Larvae of the sawfly, Neodiprion rugifrons have hatched and are feeding on jack pine in Alger County pine plains. When full grown, the larvae will have red heads, a row of dots on each side, and two stripes on the back. Generally, this insect only feeds on the old foliage and like other early summer sawflies, does not kill the trees. However, in Wisconsin, in some years a second generation sometimes appears and defoliation by this generation can kill the jack pine. Therefore, it is important to watch these infestations and if a second generation appears, control measures will probably be necessary to save the trees. These sawflies were found in quite a few other places last year, particularly in Marquette County, near Sands.

JACK PINE SAWFLIES are also extremely plentiful this year, with high populations again occurring in Luce County north of Newberry, and in north-central Lower Michigan. Several townships were heavily defoliated of old needles in 1966 in Luce County, and this appears to be going to happen again, judging from the number of small larvae on the trees. Fortunately, the defoliation of the sawfly has stopped the production of staminate flowers on the trees and therefore the jack pine budworm population has not built up in that area. Farther north in Luce County, both the budworm and the sawflies are increasing. If defoliation from both insects should occur next year, control measures will be necessary to prevent tree mortality.

In the Lower Peninsula, most of the jack pine sawfly infestations are on small jack pine plantations, with heavy populations in Roscommon and other counties. Many of the jack pine trees are growing in oak stands.

Associated with the jack pine sawfly on the jack pine, and also on red pine, is the RED PINE SAWFLY. This sawfly looks quite similar to the European pine sawfly and also feeds only on the old foliage. One characteristic of the feeding of this sawfly is different from most other sawflies, and that is that the needles are not eaten completely to the fascicle. Thus needle stubs of an inch or so long can be found on the defoliated branches. Larvae of the red pine sawfly are almost fully grown now and are common on red pine trees in north central Lower Michigan.

The FOREST TENT CATERPILLAR is again with us. For a while in the early 1960's it appeared to be increasing, but apparently conditions were not quite right and the population remained low. However, the population is again rising and considerable defoliation is evident on aspen, elm, maple and beech south of Boyne City in the Jordan Valley area. Elsewhere in northern Lower Michigan the caterpillars can be found in most hardwood stands and we can probably expect a considerable increase in the next year or two. Most of the caterpillars are now mature and therefore most of the defoliation is over for this year.

SCLERODERRIS PINE CANKER continues to kill young red and jack pine plantations and natural stands in the Upper Peninsula. The rate of mortality varies with the location and site from less than 1 percent to over 15 percent of the trees having died since last August. Many of the natural seedlings on the Baraga Plains experimental burn have died showing that not even the native trees, acclimated to the local weather are immune. In general, the most serious losses due to Scleroderris are occurring in the northern half of the Upper Peninsula.

From the number of larvae present in the staminate flowers, it is expected that wherever there are flowers on the jack pine in the Upper Peninsula, there will be noticeable defoliation by the JACK PINE BUDWORM. Fortunately, the area most heavily hit in 1966 on the Baraga Plains will not have much additional defoliation this year. Many of the trees have died from the one year of defoliation in 1966, but those that have survived have little or no budworm larvae. The adjacent area to the north, and to a lesser extent to the south, on the Baraga Plains will have

extremely heavy defoliation. Outbreaks on these plains have been recorded back as far as 1936 and have occurred periodically since. Generally little tree mortality has occurred until last year. It is assumed that the widespread drought conditions that occurred during part of the summer were an important factor in the tree mortality. In the Lower Peninsula, the defoliation should be lighter than last year.

One looper caterpillar that is commonly found in hardwoods is the BENDIR LOOPER. Although you can find this species in many areas, so far we haven't had any widespread defoliation. The larvae can be identified as it is a looper, has a rusty brown head, yellow body, and ten fine black stripes on its back.

As I said, bug-wise, we are off to a roaring start this summer. The caterpillars seem to be more abundant than in previous years, and I think that we can expect an above-average number of inquiries about defoliation of all species of trees. If you find anything other than normal insect activity, I would appreciate knowing about it so the information can be passed on to others.

For those that are interested, here are some development dates for various species:

Jack pine sawfly - 1/8" Roscommon Co. May 31
1/8" Luce Co. June 15

Forest tent caterpillar - 1 3/8" Crawford Co. June 12

Red pine sawfly - 1/8" Roscommon Co. May 31
3/8" Crawford Co. June 9

Jack pine budworm - 1/16" Roscommon Co. May 31
1/16" Baraga Co. June 13

Red-headed pine sawfly - ovipositing, Mackinac Co. June 12

Fruit tree leaf roller - 5/8" Crawford Co. June 9

European pine shoot moth - 10% pupated, Mackinac Co. June 12

Ugly nest caterpillar - 1/4" Mackinac Co. June 12

Neodiprion rugifrons - ovipositing, Alger Co. June 14
also some larvae present, 1/8"

Paul R. Flink

August 16, 1967

TO: Michigan Forest Pest Program Cooperators
FROM: Paul R. Flink, Staff Forester, Entomologist
SUBJECT: Forest Pest Situation

Someone said that sooner or later the bugs will take over the world. Maybe they aren't quite ready for the world, but they sure have made a good start on Michigan's forests. This year we seem to have more insects of a greater variety than in past years.

After minor indications of population fluctuations during the past six years, the forest tent caterpillar tremendously increased this year and defoliated several thousand acres of beech, maple and aspen forest land. This will undoubtedly be an important problem in some resort areas. Many dollars were lost from tourist trade during previous outbreaks of this pest when tourists avoided the motels with caterpillars crawling on them.

The situation I have feared might occur did occur this summer -- both the jack pine budworm and the jack pine sawfly attacking the same trees. The budworm eats the current years foliage and the sawfly eats the old needles. One year of this type of defoliation can kill the trees, and we will lose some trees in northern Luce County. The majority of the jack pine trees in central Luce County were infested to some degree by the jack pine sawfly. This was the third year of heavy sawfly defoliation for some of the trees and many trees are dead or close to it. Consequently, butting operations will start soon northeast of Newberry to salvage about 1,000 cords of jack pine pulpwood.

A possible spraying project in 1968 is being considered for the good quality jack stands in northern Luce County where the budworm and sawfly are present.

In general, the jack pine budworm infestation level dropped considerably in Lower Michigan this year, with only a few places of noticeable defoliation. This is quite a contrast to recent years when heavy defoliation was common throughout the jack pine area in northern Lower Michigan.

However, a completely opposite situation occurs in the Upper Peninsula. Heavy defoliation took place in parts of Chippewa, Luce, Alger, Marquette, Iron and Baraga counties. Some of these areas were attacked in 1966, but the 1967 infestation was much heavier and more widespread.

Jack pine on the Baraga Plains died after the 1966 defoliation and the lack of a market for jack pine is hindering the salvage operation. There did not seem to be any stand stocking that survived the severe defoliation as open-grown, well-stocked, and dense stands were all killed. The drought conditions that prevailed last summer undoubtedly contributed to the cause of the trees dying.

Roots are killed during drought periods and the effect of the root loss may show up in subsequent years. Quite possibly this was part of the reason that the jack pine on the Baraga Plains has suffered so much from this years defoliation. The tops of many thousands of trees appear to be dead or dying. Additional thousands of trees are completely dead. About 2 sections were involved in the 1966 infestation and 6 to 8 sections in 1967. This area will be given consideration for spraying in 1968 if it appears the outbreak will continue.

Sawflies of many kinds were common this summer. In addition to the jack pine sawfly and other sawflies mentioned above and in the June 21st report, the European pine sawfly was reported to have caused widespread defoliation in southern Lower Michigan with some severe defoliation.

Although the yellow-headed spruce sawflies can usually be found in small numbers, an increase in Luce County prompted many plantation owners to inquire about it this year.

The red-headed pine sawfly has persisted in a red pine plantation in Mackinac County and has completely defoliated some of the 10' trees. It was expected that this infestation that has been present for seven years or more, would decline as have other sawfly infestations. However, it hasn't, and this plantation will be sprayed in 1968 if the population continues.

Oak leaf miners were extremely common this summer in southern Michigan. Tree owners, having seen the devastation resulting from the Dutch elm disease, and having heard of oak wilt and other diseases, became quite concerned when leaves on their oaks turned brown. As a result, many inquiries were received about the leaf miner damage.

An aspen leaf miner was noted in Baraga County north of Covington. Several mines per leaf resulted in the lower part of the crown looking yellow. This miner caused blotch mines, not the serpentine mines commonly seen on aspen leaves.

Dead elm, due to Dutch elm disease infections, is becoming increasingly common in Lower Michigan. All counties in Lower Michigan are infected and Menominee County in the Upper Peninsula. Infected elms were found in Sault Ste. Marie, Ontario this summer. Devastation by this disease has been so complete that Al Phillips reports that very little elm will be left after this year that would be commercially attractive to sawmill operators in the Lapeer - Sanilac - St. Clair - Macomb - Oakland County area.

Larch sawfly populations have generally increased throughout the state with many areas of over 75% defoliation. Actual defoliation varies from stand to stand and year to year so that the same stands are not subjected to continuous severe defoliation.

Several, as yet unidentified, problems have arisen this year. In the Soil Conservation District Nursery at Walhalla, the 1-0 and 3-0 red pine seedlings turned brown this spring and died. About half the 3-0 seedlings died and over 90% of the 1-0 seedlings. Samples of the dead and dying seedlings were sent to pathologists, but the cause is still unknown.

In eastern Chippewa County widespread oak defoliation occurred due to a leaf roller. It was not the fruit tree leaf roller, but its identity is not yet been determined.

Ash was reported dying in Antrim County but this has not been checked further.

Dead and dying maple branches have been observed in many areas. These look similar to the situation that occurred about 10 years ago, a year or two after a severe drought. I was told by a pathologist that dead branches on hardwoods, the after effects of root killing by drought, usually show up one, two, or more years after the drought. Pathologists could find a fungus on most of the dead branches during the previous situation, but since it was only weakly parasitic, they believed it could only kill already weakened branches.

The saddled prominent caterpillar stripped maple, beech and ironwood on about a section of hardwoods in southwestern Luce County. In the same stands, and also common in other parts of the Upper Peninsula, the cherry scallop shell moth caused black cherry leaves to turn brown. The cherry leaves are fed upon, and webbed together. Some 30 foot cherry trees were seen with all the leaves brown. As the caterpillars grow, additional leaves are webbed together in a mass. This is somewhat similar to the ugly-nest caterpillar that feeds on ground cherry.

At Shingleton the dogwood was infested with white-marked tussock moth and a sawfly.

If you know of conditions of importance that I have not mentioned, please let me know.

The information in this report is based upon personal observations and reports and letters from Conservation Department foresters.

A handwritten signature in cursive script, reading "Paul J. Hunk". There is a small mark below the signature that appears to be "pk".

